AMENDMENTS TO THE DRAWINGS:

The attached one (1) sheet of drawings includes changes to Figure 7. Figure 7 has been amended without prejudice to show a plurality of spray-discharge orifices 17 in cover plate 14. No new matter has been added.

Attachment: One (1) Replacement Sheet

REMARKS

I. Introduction

Claims 13 to 24 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for foreign priority and the indication that all copies of the certified copies of the priority documents have been received from the International Bureau.

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

II. Objection to the Drawings

As regards the objection to the drawings, While Applicants do not necessarily agree with the merits of this objection, to facilitate matters, Figure 7 has been amended herein without prejudice to show a plurality of spray-discharge orifices 17 in cover plate 14. Support for this amendment may be found, for example, at page 7, lines 12 to 14 of the Specification. This Specification has been amended herein to conform to the amendments made to the drawings. No new matter has been added. In view of the foregoing, withdrawal of the objection is respectfully requested.

III. Objection to the Specification

The Specification was objected to with regard to the title. In this regard, the title has been changed herein to --FUEL INJECTOR NOZZLE SEAL--. In view of the foregoing, withdrawal of this objection is respectfully requested.

IV. Rejection of Claims 23 and 24 Under 35 U.S.C. § 112

Claim 23 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. While Applicants do not necessarily agree with the merits of the this rejection, to facilitate matters, claim 23 has been amended herein without prejudice to more clearly indicate that the phrase "amorphous structure" refers to a metallic material from which a metal foil is

produced. Support for this amendment may be found, for example, at page 2, lines 25 to 27, and page 5, lines 12 to 16, of the Specification. Withdrawal of this rejection is therefore respectfully requested.

Claim 24 was rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. It is respectfully submitted that the presently claimed subject matter of claim 24 is described in sufficient detail in the Specification that it is enabled as to one skilled in the art.

The standard for determining whether a patent application complies with the enablement requirement is whether the specification describes how to make and use the invention -- which is defined by the claims. (See M.P.E.P. § 2164). The Supreme Court established the appropriate standard as whether any experimentation for practicing the invention was undue or unreasonable. (See M.P.E.P. § 2164.01 (citing Mineral Separation v. Hyde, 242 U.S. 261, 270 (1916); In re Wands, 858 F.2d. 731, 737, 8 U.S.P.Q.2d 1400, 1404 (Fed Cir. 1988))). Thus, it is axiomatic that the enablement test is "whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation." (See id. (citing United States v. Teletronics, Inc., 857 F.2d 778, 785, 8 U.S.P.Q.2d 1217, 1223 (Fed. Cir. 1988))).

Also, the Examiner bears the initial burden of establishing why the "scope of protection provided by a claim is not adequately enabled by the disclosure." (See M.P.E.P. § 2164.01 (citing In re Wright, 999 F.2d 1557, 1562, 27 U.S.P.Q.2d 1510, 1513 (Fed. Cir. 1993))). Accordingly, a specification that teaches the manner and process of making and using an invention in terms that correspond in scope to those used in describing and defining the claimed subject matter complies with the enablement requirement. (See id.).

The Examiner alleges failure to provide "an enabling description of the coolant feature, its function and how it works in relation to the general cooling of the engine . . . ." However, this rejection is not commensurate with the scope of claim 24. In this regard, claim 24 recites a fuel injector having a plurality of cavities "configured to channel a flow of coolant." Nothing is claimed with regard to the general cooling of an engine. Properly construing the scope of claim 24, Applicants respectfully maintain that the Specification sufficiently enables one reasonably skilled in the art to make or use the claimed subject matter -- a fuel injector with a plurality

of cavities (between a seal and either a nozzle body or a cylinder head) configured to channel a flow of coolant -- without undue experimentation.

In view of the foregoing, withdrawal of this rejection is respectfully requested.

V. Rejection of Claims 13 to 16 and 24 Under 35 U.S.C. § 102(b)

Claims 13 to 16 and 24 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,481,421 ("Reiter"). It is respectfully submitted that Reiter does not anticipate these claims for at least the following reasons.

It is "well settled that the burden of establishing a prima facie case of anticipation resides with the [United States] Patent and Trademark Office." Ex parte Skinner, 2 U.S.P.Q.2d 1788, 1788 to 1789 (Bd. Pat. App. & Inter. 1986). To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Claim 13 relates to a fuel injector, and, as amended herein without prejudice, provides for a seal which has a sleeve-type design with a structured cross section, wherein the seal extends across the axial length of the nozzle body, and wherein ***the seal directly contacts both the nozzle body and a receiving bore of the cylinder head*** in order to achieve a reliable sealing effect and effective heat dissipation from the nozzle body. Support for this amendment may be found, for example, at page 2, lines 7 to 12, and at page 5, lines 3 to 11, of the Specification.

The seal is designed as a corrugated tube sleeve and installed such that it assumes a direct sealing function between fuel injector 1 and cylinder head 5. As disclosed in the Specification, seal 10 has touching contact both at nozzle body 3 of fuel injector 1 and also at the wall of the receiving bore of cylinder head 5. As can already be further gathered from the Specification, seal 10 provides both a very reliable sealing effect and also an especially effective heat dissipation from nozzle body 3. The heat transfer from fuel injector 1 to cylinder head 5 is therefore actually

desired, which is why seal 10 is formed in this manner and installed in the receiving bore such that this requirement is satisfied by direct material contact.

Reiter, relating to a compensating element for a fuel inject, discloses, referring to Figure 2, a fuel injection system which has a fuel injector 1 in a receiving bore 5 of a cylinder head 6 for the direct injection of fuel into combustion chamber 3 of an internal combustion engine. Fuel injector 1 has a compensating element 2 having a compensation sleeve 30 in the form of a corrugated tube compensator 27, it being possible, on the one hand, to place a connecting segment 23 of compensation sleeve 30 on top of a housing section 20 of fuel injector 1. On the other hand, compensating element 2 is braced in receiving bore 5 of cylinder head 6 via a support segment 25 of compensation sleeve 30. A flexible segment 24 is provided between connecting segment 23 and support segment 25. At support segment 25, compensation sleeve 30 has a circumferentially formed radial shoulder 31, and a first sealing ring 16 is provided between this shoulder 31 and a step 17 of receiving bore 5. The sealing element is therefore disposed between step 17 of cylinder head 6 and compensation sleeve 30.

The subject matter of Reiter is distinguished by sealing element 16 being designed in combination with a compensating element 2, and a compensation sleeve 30 at a support segment 25 having a circumferentially formed radial shoulder 31, and a first sealing ring 16 being provided between this shoulder 31 and a step 17 of receiving bore 5. Since the contact pressure of the seal is caused by the axial press-down force, which retains fuel injector 1 and compensating element 2 in receiving bore 5, and not by radial clamping of a sealing ring in a bore, the unit made up of fuel injector 1 and compensating element 2 is easy to install and uninstall. Sealing ring 16 provides elastic support of radial shoulder 31 of compensating element 2. The actual sealing of fuel injector 1 is ensured by sealing ring 16 between compensating element 2 and cylinder head 6. A support ring 18, which delimits the axial compression of first sealing ring 16, is disposed about first sealing ring 16 in a radially outward position. Support segment 25 is braced with the aid of support ring 18 at step 17 of receiving bore 5.

In addition, compensation sleeve 30 is sealed with respect to fuel injector 1 by a second sealing ring 8 between support segment 25 of compensation sleeve 30 and fuel injector 1.

By itself, compensating element 2 having corrugated tube design 27 is therefore not a sealing element for sealing fuel injector 1 from the wall of receiving bore 5 of cylinder head 6. Instead, compensating element 2 is to transmit the axial force between fuel injector 1 and receiving bore 5, by which fuel injector 1 is braced with respect to the holding force fixing it in place. In this regard, the flexible design of compensating element 2 allows adjustment of the holding force and the position of fuel injector 1.

It is thus clear that Reiter does not disclose or even suggest a ***seal that directly contacts both the nozzle body and a receiving bore of the cylinder head*** in order to achieve a reliable sealing effect and effective heat dissipation from the nozzle body. Since Reiter does not disclose, or even suggest, all of the features recited in claim 13, it is respectfully submitted that Reiter does not anticipate claim 13.

Claims 14 to 16 and 24 ultimately depend from claim 13 and therefore include all of the features recited in claim 13. It is therefore respectfully submitted that Reiter does not anticipate these dependent claims for at least the same reasons set forth above in support of the patentability of claim 13.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

VI. Rejection of Claims 17 to 23 Under 35 U.S.C. § 103(a)

Claims 17 to 23 were rejected for obviousness under 35 U.S.C. § 103(a). In this regard, claim 17 was rejected as unpatentable over the combination of Reiter and U.S. Patent No. 7,047,949 ("Reiter et al."), claim 18 was rejected as unpatentable over the combination of Reiter and U.S. Patent No. 6,578,554 ("Schroeer"), and claims 19 to 23 were rejected as unpatentable over the combination of Reiter, Schroeer, and U.S. Patent No. 4,589,596 ("Stump et al."). It is respectfully submitted that the combination of Reiter, Reiter et al., Schroeer, and Stump et al. does not render unpatentable any of these claims for at least the following reasons.

Claims 17 to 23 ultimately depend from claim 13 and therefore include all of the features included in claim 13. As more fully set forth above, Reiter does not disclose, or even suggest, all of the features recited in claim 13. Reiter et al., Schroeer, and Stump et al. are not relied upon for disclosing or suggesting the

features of claim 13 not disclosed or suggested by Reiter. Indeed, Reiter et al., Schroeer, and Stump et al. do not disclose, or even suggest, the features of claim 13 not disclosed or suggested by Reiter.

In view of all of the foregoing, it is respectfully submitted that the combination of Reiter, Reiter et al., Schroeer, and Stump et al. does not disclose, or even suggest, all of the features of the present claims. As such, it is respectfully submitted that the combination of Reiter, Reiter et al., Schroeer, and Stump et al. does not render unpatentable the present claims. Accordingly, withdrawal of the present rejection is respectfully requested.

VII. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Date: May 11, 2007 By: _____

Gerard A. Messina
Reg. No. 35,952

KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646

42,194